

**IN THE CLAIMS**

The following listing of the claims is provided in accordance with 37 C.F.R. 1.121:

1. (canceled).
2. (previously presented) A phosphor having a formula of  $(D_{1-x}Eu_x)A_3B_4O_{12}$ ; wherein D is a combination of yttrium and gadolinium A is a combination of aluminum, scandium, and gallium; and x is in a range from about 0.001 to about 0.3.
3. (original) The phosphor according to claim 2, wherein x is in a range from about 0.01 to about 0.2.
- 4.-7. (canceled).
8. (currently amended) A phosphor blend comprising: (a) a phosphor having a formula of  $(D_{1-x}Eu_x)A_3B_4O_{12}$ ; wherein D is ~~at least one metal selected from the group consisting of yttrium and elements of the lanthanide series other than europium a combination of Y and Gd, and A is a combination of Al, Sc, and Ga; A is at least a metal selected from the group consisting of aluminum, gallium, indium, and scandium~~; and x is in a range from about 0.001 to about 0.3; (b) a green light-emitting phosphor; and (c) a blue light-emitting phosphor.
9. (original) The phosphor blend according to claim 8, wherein x is in a range from about 0.01 to about 0.2.
- 10.-13. (canceled).

14. (original) The phosphor blend according to claim 8, wherein the green light-emitting phosphor is selected from the group consisting of  $\text{LaPO}_4:\text{Ce}^{3+}, \text{Tb}^{3+}$ ;  $\text{GdMgB}_5\text{O}_{10}:\text{Ce}^{3+}, \text{Tb}^{3+}$ ;  $\text{CeMgAl}_{11}\text{O}_{19}:\text{Ce}^{3+}, \text{Tb}^{3+}$ ;  $\text{Ca}_5(\text{PO}_4)_3(\text{Cl}, \text{F}, \text{OH}):\text{Sb}^{3+}, \text{Mn}^{2+}, \text{Eu}^{2+}$ ;  $\text{Sr}_4\text{Al}_{14}\text{O}_{25}:\text{Eu}^{2+}$ ; and  $\text{BaAl}_8\text{O}_{13}:\text{Eu}^{2+}$ ; and combinations thereof.

15. (original) The phosphor blend according to claim 8, wherein the blue light-emitting phosphor is selected from the group consisting of  $(\text{Ba}, \text{Sr}, \text{Ca})\text{MgAl}_{10}\text{O}_{17}:\text{Eu}^{2+}$ ;  $(\text{Ba}, \text{Sr}, \text{Ca})_5(\text{PO}_4)_3(\text{Cl}, \text{F}, \text{OH}):\text{Eu}^{2+}$ ;  $(\text{Ba}, \text{Sr}, \text{Ca})\text{BPO}_5:\text{Eu}^{2+}$ ; and combinations thereof.

16. (currently amended) A method for making a phosphor, the method comprising:

- (a) mixing oxygen-containing compounds of:
  - (1) at least one first metal selected from the group consisting of yttrium and elements of lanthanide series other than europium;
  - (2) at least one second metal selected from the group consisting of aluminum, gallium, indium, and scandium;
  - (3) boron; and
  - (4) europium to form a mixture; and
- (b) heating the mixture in an oxygen-containing atmosphere at a temperature in a range from about 900°C to about 1400°C for a time sufficient to convert the mixture to a phosphor, wherein the phosphor comprises a material having a formula of  $(\text{D}_1 - x\text{Eu}_x)\text{A}_3\text{B}_4\text{O}_{12}$ , where D is at least one metal selected from the group consisting of yttrium and elements of the lanthanide series other than europium; A is at least one metal selected from the group consisting of aluminum, gallium, indium, and scandium, and x is in a range from about 0.001 to about 0.3, and wherein the oxygen-containing compound of boron is  $\text{H}_3\text{BO}_3$ , and an amount of  $\text{H}_3\text{BO}_3$  in the mixture is in excess of stoichiometric amount.

17.-18. (canceled).

19. (currently amended) The method according to claim [[18]]16, further comprising washing the phosphor after heating to remove excess boron compound.

20. (currently amended) A method of preparation of a phosphor, the method comprising:

- (a) providing a first solution that comprises:
  - (1) at least one compound of at least one first element selected from the group consisting of yttrium and elements of lanthanide series other than europium;
  - (2) at least one compound of at least one second element selected from the group consisting of aluminum, gallium, indium and scandium;
  - (3) at least one compound of boron; and
  - (4) at least one compound of europium;
- (b) adding one second solution to the first solution to produce a precipitate comprising compounds of the first element, the second element, boron, and europium; the second solution comprising a base selected from the group consisting of ammonium hydroxide; hydroxides of at least one element selected from the group consisting of yttrium, and elements of lanthanide series; organic esters of carboxylic acids; organic amines; and combinations thereof; and
- (c) heating the precipitate in an oxygen-containing atmosphere at a temperature in a range from about 900°C to about 1400°C for a time sufficient to convert the precipitate to a phosphor, wherein the phosphor comprises a material having a formula of  $(D_{1-x}Eu_x)A_3B_4O_{12}$ , where D is at least one of Y and a rare earth element excluding europium, and A is at least one of Al, Ga, Sc, and In, and x is in a range from about 0.001 to about 0.3.

21. (currently amended) A light source comprising:

- (a) a source of UV radiation that is located in a sealed housing; and
- (b) a phosphor blend disposed within the sealed housing and adapted to be excited by the UV radiation and to emit visible light, wherein the phosphor blend comprises: a phosphor having a formula of  $(D_{1-x}Eu_x)A_3B_4O_{12}$ ; wherein D is ~~at least one metal selected from the group consisting of yttrium and elements of the lanthanide series other than europium; A is at least a metal selected from the group consisting of aluminum, gallium, indium, and scandium. a combination of Y and Gd, and A is a combination of Al, Sc, and Ga, and x is in a range from about 0.001 to about 0.3.~~

22. (canceled).

23. (currently amended) The light source according to claim [[22]]21, wherein x is in a range from about 0.01 to about 0.2.

24.-27. (canceled).

28. (original) The light source according to claim 21, wherein the source of UV radiation is a mercury vapor discharge.

29. (original) The light source according to claim 21, further comprising at least a green light-emitting phosphor selected from the group consisting of  $LaPO_4:Ce^{3+}, Tb^{3+}$ ;  $GdMgB_5O_{10}:Ce^{3+}, Tb^{3+}$ ;  $CeMgAl_{11}O_{19}:Ce^{3+}, Tb^{3+}$ ;  $Ca_5(PO_4)_3(Cl, F, OH):Sb^{3+}, Mn^{2+}, Eu^{2+}$ ;  $Sr_4Al_{14}O_{25}:Eu^{2+}$ ; and  $BaAl_8O_{13}:Eu^{2+}$ ; and combinations thereof.

30. (original) The light source according to claim 21, further comprising at least a blue light-emitting phosphor selected from the group consisting of  $(Ba, Sr, Ca)MgAl_{10}O_{17}:Eu^{2+}$ ;  $(Ba, Sr, Ca)_5(PO_4)_3(Cl, F, OH):Eu^{2+}$ ;  $(Ba, Sr, Ca)BPO_5:Eu^{2+}$ ; and combinations thereof.

31. (canceled).